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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,206	02/25/2002	Makoto Shihoh	03500.016214	2849

5514 7590 01/13/2004

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NEW YORK, NY 10112

EXAMINER

VO, ANH T N

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,206

Applicant(s)

SHIHOH ET AL.

Examiner

Anh T.N. Vo

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MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 10/24/2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

FINAL REJECTION

Response to Applicant's Amendment

The rejection under 35 U.S.C. 112, second paragraph, is withdrawn in view of the amendments to the claims.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kaneko et al. (US Pat. 5,592,200) in view of Yamazaki et al (JP359192573) and further in view of Kitahara et al (JP 403007350).

Kaneko discloses in Figure 1 an ink jet apparatus comprising:

- an ink cartridge (2) having a liquid bag for containing liquid (2a) to be supplied to a liquid ejection head (1) and adapted to generate negative pressure in the liquid ejection head as a result of a difference height between the liquid ejection head (1) and the liquid bag (2), and a sensor (11) for detecting the remaining ink.

However, Kaneko does not disclose that the ink bag having two opposed side and being arranged to have facing a direction opposite to the direction of gravity and the other side to be

freely movable, and a means for detecting amount of remaining liquid in the bag by sensing the position of the other side.

Nevertheless, Yamazaki et al teaches in Figures 3-4 an ink cartridge (20) for an ink jet printer comprising:

- a liquid bag (1) for containing liquid to be supplied to a liquid ejection head (not shown);
- said liquid bag (1) being so arranged as to make a side of said liquid bag facing a direction opposite to the direction of gravity out of two sides (11) having a largest area to be rigidly held at least partly and the other side to be freely movable;
- said liquid bag (1) being provided with a means (26, 27, 28, 28') for detecting an amount of liquid remaining in said liquid bag (1) by a position of the other side facing the direction of gravity and adapted to move according to the amount of liquid contained in said liquid bag (1);
- wherein said liquid bag (1) is rigidly secured in an area between 20% and 60% of the area that can be used for containing liquid.

Kitahara teaches an ink cartridge in Figure 2 comprising a detector (30) placed at a lower part of the cartridge (20) for accurately detecting the remaining ink.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the ink cartridge taught by Yamazaki et al and place the detector at the lower part of the ink cartridge taught by Kitahara et al in the cartridge of Kaneko et al for the purpose of easily, economically and accurately detecting the residual amount of ink, see the Abstract of Yamazaki.

Note that, a skilled artisan recognizes that the detecting means (26, 27, 28) of Yamazaki can be placed at the lower part of the cartridge (20) for accommodating with the physical size and shape of a carriage without changing the performance of the detecting means. Thus, rearranging the position of the detecting means would have been obvious and is considered to be

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a matter of a mechanical design expedient for an engineer. *In re Japikse*, 86 USPQ 70. See how the detector positioned

Response to Applicant's Arguments

The applicant argues that the cartridge of Yamazaki and Kaneko is mounted in an opposite mounting arrangement as compared to the applicant's claims. The argument is not persuasive because this limitation is suggested in the Kithara et al as discussed above. Moreover, the detecting means (26, 27, 28) of Yamazaki can be placed at the lower part of the cartridge (20) without changing the performance of the detecting means and rearranging the position of the detecting means for accommodating with the physical size and shape of a carriage would have been obvious and is considered to be a matter of a mechanical design expedient for an engineer. *In re Japikse*, 86 USPQ 70.

CONCLUSION

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (703) 305-8194. The examiner can normally be reached on Tuesday to Friday from 8:00 A.M. to 6:00 P.M. The fax number of this Group 2800 is (703) 305-3431 or 305-3432.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308- 0956.

A handwritten signature in black ink, appearing to be 'Anh T.N. Vo', with a long horizontal flourish extending to the right.

ANH T.N. VO
PRIMARY EXAMINER

January 10, 2004